SECTION D

SPENT NUCLEAR FUEL

PROJECT MANAGERS

P. G. Loscoe, RL
Phone: (509) 373-7465

R. G. Jones, FH
Phone: (509) 376-1413

SUMMARY

The Spent Nuclear Fuel (SNF) mission consists of the Spent Nuclear Fuel Project WBS 1.3.1.1 (Project Baseline Summary [PBS] WM01) and the subsequent Canister Storage Building (CSB) Operations Project WBS 1.3.2.1 (PBS WM02), which doesn't start until FY 2004.

NOTE: Unless otherwise noted, the Safety, Conduct of Operations, Milestone Achievement, and Cost/Schedule data contained herein is as of April 30, 2000. All other information is as of May 22, 2000.

The first four Multi-Canister Overpacks (MCOs) were received from Joseph Oat, Inc. Fabrication of the MCO baskets continued at the Hanford Site.

The integrated MCO/Process Pre-operational Acceptance Test on Bay 5 has been completed successfully.

Some re-tests are on-going on Bay 5, nevertheless, the bay was made available to Operations for training and procedures walkdown. Bay 4 integrated test will be initiated at completion of Bay 5 retests.

The new baseline for Cold Vacuum Drying (CVD) Facility shows that a third bay is not required, the equipment being procured for that Bay will be used as spare parts.

Fiscal year-to-date milestone performance (EA, DOE-HQ, and RL) shows that two out of three milestones (67 percent) were completed on or ahead of schedule and one milestone was completed late.

The Milestone Achievement details, found following cost and schedule variance analysis, provide further information on all milestone types.

ACCOMPLISHMENTS

- The Spent Nuclear Fuel (SNF) Project achieved a landmark safety milestone by working one million hours without an injury that caused a lost workday.

- Baseline Change Request SNF-2000-009, which accelerates the completion of sludge removal by one year from August 2005 to August 2004 and reduces total project life cycle cost by $16 million, was implemented.

- Completed Canister Storage Building turnover from Projects to Operations with system turnovers in progress.

- The first four MCOs were received from Joseph Oat, Inc.

- The Cold Vacuum Drying Facility Bay 5 was turned over to Operations for training and procedure walkdown.

- The 1999 Annual Debris Report was completed and transmitted to RL. Transmittal to the Environmental Protection Agency is expected by May 31, 2000.

- Installation of the Canister Storage Building Overpack Tubes was completed.

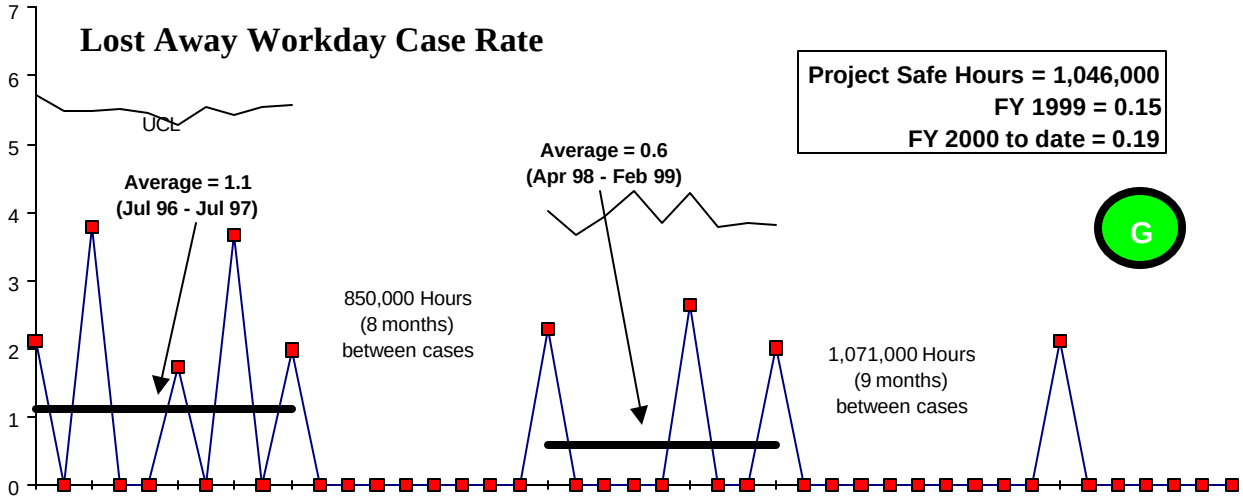
- The Security Requirements Analysis (SRA) was completed and an unclassified version was approved and released. The SRA concluded there were no special requirements for the storage of sludge at T-Plant.

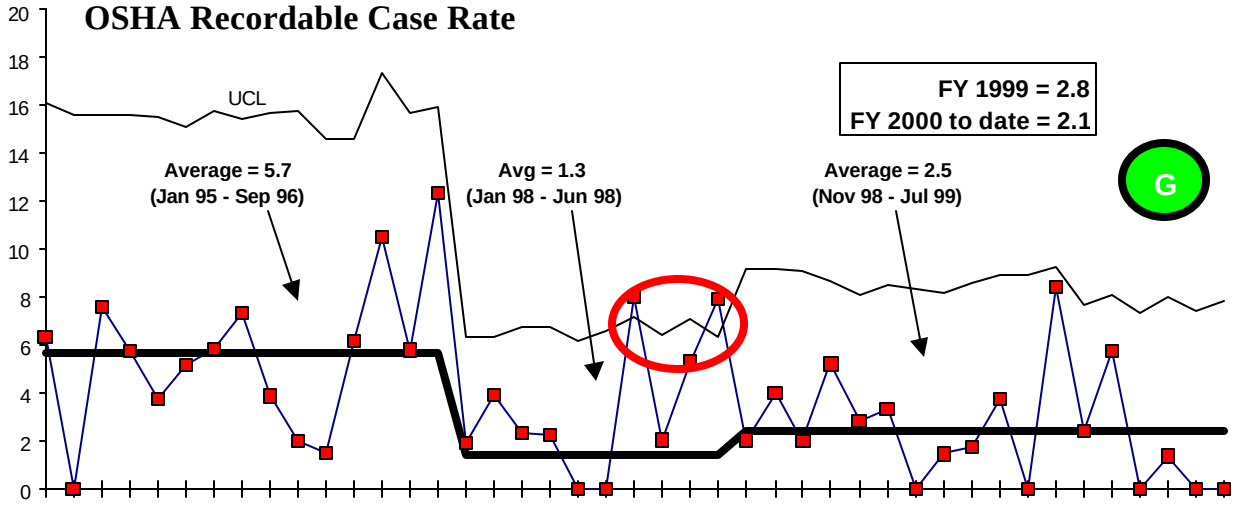
- Phase Startup Initiative (PSI) Phase 1 and II testing activities continued. Component tests of the Integrated Water Treatment System (IWTS) and the Fuel Retrieval System (FRS) were completed successfully.

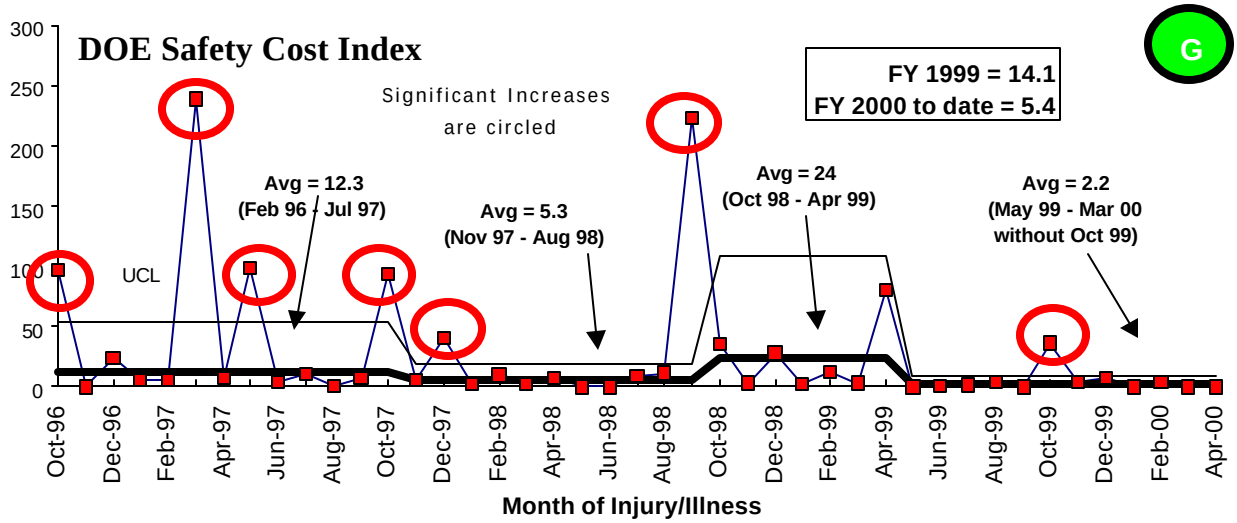
SAFETY

The project has achieved over 1,046,000 safe work hours. The past ten of eleven months for the DOE Cost Index and Severity Rate have been below average. Although the SNF Project experienced some safety performance degradations with the start of FY 2000, performance continues to improve. October 1999 had two Restricted Workday Cases, and one Lost Away Workday Case. This was a nearly significant increase (close to but not above the UCL) on the OSHA Recordable Case Rate, and a significant increase (above the UCL) on the Lost / Restricted Workday Case Rate (which is a supplemental graph).

The project's safety record is improving in both OSHA recordables and DOE Cost Index. Lost away overall has had only one case in the past year.


Lost Away Workday Case Rate
Project Safe Hours = 1,046,000
FY 1999 = 0.15
FY 2000 to date = 0.19
UCL
Average = 1.1
(Jul 96 - Jul 97)
Average = 0.6
(Apr 98 - Feb 99)
G
850,000 Hours
(8 months)
between cases
1,071,000 Hours
(9 months)
between cases
0
1
2
3
4
5
6
7


OSHA Recordable Case Rate
FY 1999 = 2.8
FY 2000 to date = 2.1
UCL
Average = 5.7
(Jan 95 - Sep 96)
Avg = 1.3
(Jan 98 - Jun 98)
Average = 2.5
(Nov 98 - Jul 99)
G
0
2
4
6
8
10
12
14
16
18
20

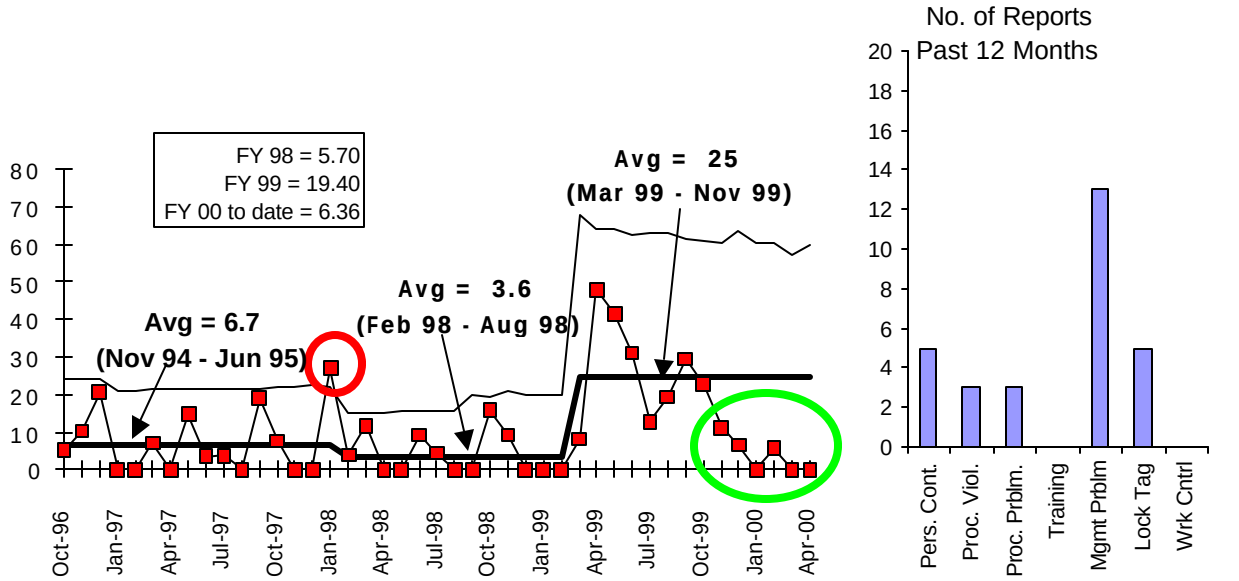

DOE Safety Cost Index
FY 1999 = 14.1
FY 2000 to date = 5.4
Significant Increases
are circled
G
UCL
Avg = 12.3
(Feb 96 - Jul 97)
Avg = 5.3
(Nov 97 - Aug 98)
Avg = 24
(Oct 98 - Apr 99)
Avg = 2.2
(May 99 - Mar 00
without Oct 99)
0
50
100
150
200
250
300
Oct-96
Dec-96
Feb-97
Apr-97
Jun-97
Aug-97
Oct-97
Dec-97
Feb-98
Apr-98
Jun-98
Aug-98
Oct-98
Dec-98
Feb-99
Apr-99
Jun-99
Aug-99
Oct-99
Dec-99
Feb-00
Apr-00
Month of Injury/Illness

CONDUCT OF OPERATIONS / ISMS STATUS

CONDUCT OF OPERATIONS

Events per 200,000 hours

Green



ISMS STATUS

Green

- The ISMS Phase I/II verification for the SNF Project was completed on November 19, 1999.
- The Corrective Action Plans for the "Opportunities for Improvement" were developed and transmitted to RL on January 10, 2000.
  - The actions required to enable ISMS implementation to be declared March 31, 2000 are now complete. Documentation packages have been transmitted to the Environmental, Safety & Health organization. Three of the four packages were reviewed as part of the PHMC Phase I verification. Two of the items were closed and may require further changes (slight revision to the System Description to provide further details on Construction activities).

BREAKTHROUGHS / OPPORTUNITIES FOR IMPROVEMENT

Breakthroughs

- Baseline Change Request SNF-2000-009, which accelerates the completion of sludge removal by one year from August 2005 to August 2004 and reduces total project life cycle cost by $16 million, was implemented.

Opportunities for Improvement

Phased Startup Initiative (PSI) — Results from the PSI are expected to improve the fuel production rates by approximately one month in FY 2001.

Upcoming Activities

Cold Vacuum Drying (CVD) Facility Testing — Testing at the CVD Facility continues to remain on the critical path. Completion of testing is scheduled for the end of June 2000.

Cask Loadout System (CLS) Testing — Complete startup testing by mid-June 2000.

Phased Startup Initiative (PSI) — Complete PSI Phases 1 & 2 in order to support start of Phase 3. Complete Phases 3 & 4 by mid-August 2000.

Storage Projects — Delivery of six more Multi-Canister Overpacks (MCO) are expected at the end of May, with eight more expected to be delivered in June. Delivery of the first shipment of MCO baskets is scheduled for May 16, 2000.

Fuel Removal Activities — Begin DOE Operations Readiness Review by mid-September 2000. Begin K West Basin fuel removal, drying & storage operations by November 30, 2000.

Cost Performance ($M):

	BCWP	ACWP	VARIANCE
Spent Nuclear Fuel	$111.3	$123.2	- $11.9

The unfavorable cost variance of $11.9 million (11 percent) is primarily due to Cold Vacuum Drying Facility construction testing being omitted from the SNF baseline established in FY 1998; Hanford Site assessments higher than baseline; and facility start up cost increases as a result of first-of-a-kind equipment and testing.

Schedule Performance ($M):

	BCWP	BCWS	VARIANCE
Spent Nuclear Fuel	$111.3	$111.0	$0.3

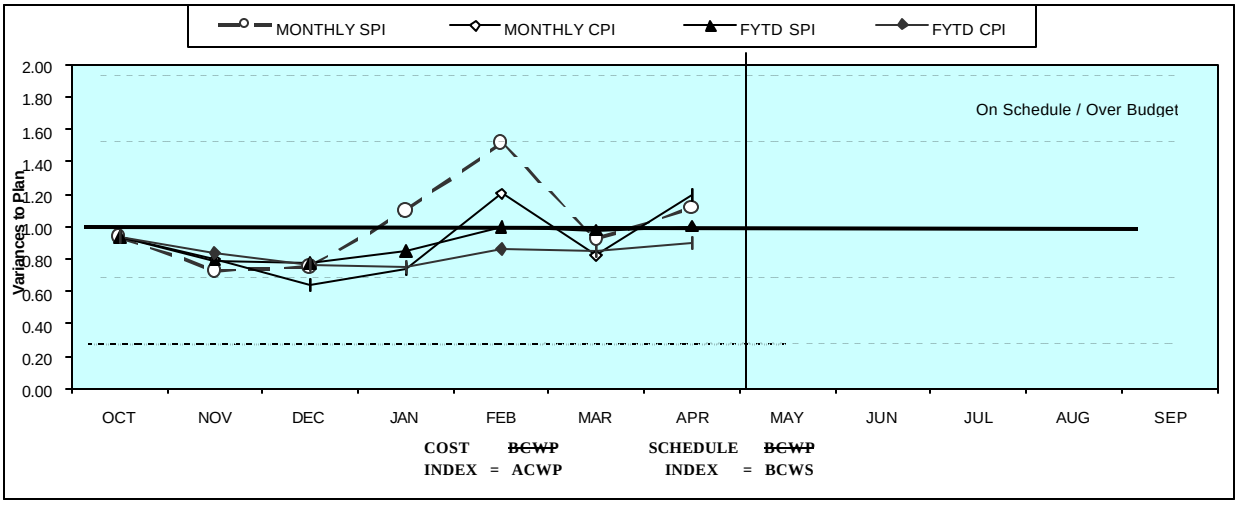
The favorable schedule variance of $0.3 million (0 percent) is within the established thresholds.

FY 2000 Cost/Schedule Performance – All Fund Types Cumulative to Date Status – ($000)

By PBS		FYTD BCWS	BCWP	ACWP	SV	%	CV	%	PEM	FYSF	EAC
PBS WM01 WBS 1.3	Spent Nuclear Fuel Project	$ 110,963	$ 111,265	$ 123,210	$ 302	0%	$ (11,945)	-11%	$ 195,074	$ 201,404	$ 201,404
	Total	$ 110,963	$ 111,265	$ 123,210	$ 302	0%	$ (11,945)	-11%	$ 195,074	$ 201,404	$ 201,404

Cost/Schedule Performance Indices (April 2000 and FYTD)

Yellow



FY 2000	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MONTHLY SPI	0.94	0.73	0.75	1.09	1.52	0.92	1.12					
MONTHLY CPI	0.93	0.79	0.64	0.74	1.20	0.82	1.19					
FYTD SPI	0.94	0.79	0.78	0.85	0.99	0.98	1.00					
FYTD CPI	0.93	0.84	0.76	0.75	0.86	0.85	0.90					
MONTHLY BCWS	$8,574	$19,209	$15,681	$12,081	$15,753	$20,085	$19,582	$19,254	$13,162	$13,955	$18,992	$18,748
MONTHLY BCWP	$8,049	$13,968	$11,770	$13,221	$23,909	$18,511	$21,838					
MONTHLY ACWP	$8,626	$17,581	$18,370	$17,831	$19,906	$22,611	$18,286					
FYTD BCWS	$8,574	$27,783	$43,463	$55,544	$71,297	$91,382	$110,963	$130,217	$143,379	$157,334	$176,326	$195,074
FYTD BCWP	$8,049	$22,016	$33,786	$47,008	$70,917	$89,428	$111,265					
FYTD ACWP	$8,626	$26,207	$44,577	$62,408	$82,314	$104,925	$123,210					

Cost Variance Analysis: (- $11.9M)

WBS/PBS	Title
1.3.1/WM01	Spent Nuclear Fuel Project

Description/Cause: The unfavorable cost variance of $11.9 million (11 percent) is primarily due to the Cold Vacuum Drying Facility construction testing being omitted from the SNF baseline established in FY 1998, the Hanford Site assessments being higher than the baseline, and facility start up cost increases as a result of first of a kind equipment and testing.

Impact: These overruns were anticipated changes foreseen during the contingency analysis and will be

allocated through change control. Additional unanticipated cost impacts, i.e., rate increases, Corrective Action Management, Hanford Security, and fee allocation are being compensated with appropriate site actions. In addition, Baseline Change Requests (BCRs) have been developed and reviewed and are on hold pending source availability for engineering, testing and administrative support. An $8 million fiscal year end expense funding shortfall has been identified to FH and RL budget staff.
Corrective Action: Approve pending BCRs.

SCHEDULE VARIANCE ANALYSIS: $0.3M

WBS/PBS **Title**

1.3.1/ WM01 **Spent Nuclear Fuel Project**
Description /Cause: The favorable schedule variance of $0.3M (0 percent) is within the established thresholds.
Impact: None.
Corrective Action: None

ISSUES

There are no technical, DOE, Regulator or external issues identified at this time. However, an internal DOE budget reprogramming may be required to remedy SNF's projected FY 2000 expense funding shortage.

BASELINE CHANGE REQUESTS CURRENTLY IN PROCESS ($000)

PROJECT CHANGE NUMBER	DATE ORIGIN.	BCR TITLE	FY00 COST IMPACT $000	SCH	TECH	DATE TO CCB	CCB APR'VD	RL APR'VD	CURRENT STATUS
SNF-2000-010	1/31/00	SNF Project FY2000 MYWP Revised Rate Impacts		N	N				In preparation.
SNF-2000-013	3/6/00	Delayed Scope for TGA Sample Disposal		Y	Y				Transmitted to FH CCA 3/28/00. On Hold.
SNF-2000-014	3/20/00	FY2000 Budget Authority Increase	$1,300	N	N				Transmitted to FH CCA 3/28/00. On Hold.
SNF-2000-016	3/24/00	Defer Site-Wide SNF Project Activities to Align with Site-Wide Prioritization	($1,300)	Y	N				In Project Controls Review.
SNF-2000-019	5/9/00	FRS/IWTS Phased Startup Initiative Adding Phased III and IV to Baseline	$2,500	Y	Y				In preparation.
ADVANCE WORK AUTHORIZATIONS									
		Nothing to report.							

SPENT NUCLEAR FUELS – WBS 1.3

MILESTONE ACHIEVEMENT

MILESTONE TYPE	FISCAL YEAR-TO-DATE				REMAINING SCHEDULED			TOTAL FY 2000
	Completed Early	Completed On Schedule	Completed Late	Overdue	Forecast Early	Forecast On Schedule	Forecast Late	
Enforceable Agreement	2	0	0	0	0	0	0	2
DOE-HQ	0	0	0	0	0	0	0	0
RL	0	0	1	0	0	3	0	4
Total Project	2	0	1	0	0	3	0	6

Status as of 5/22/2000

Green

Tri-Party Agreement / EA Milestones

Number	Milestone Title	Status
M-34-14A (S06-97-009)	**"Complete K West Basin Cask Facility Modules"**	**Due 2/29/00** — Completed on schedule
M-34-04 (S01-99-124),	**"Submit Remedial Design Report/Remedial Action Work Plan for the K Basins"**	**Due 3/31/00** – Completed over 1 month early (2/10/00).
M-34-05 (T01)	**"Submit Report on Quantities, Character, and Management of K Basins Debris"**	**Due 5/31/00** – Submitted to RL on 5/9/00. On schedule for RL submittal to EPA.
M-34-16 (S00-01-900)	**"Initiate removal of K West Basin Spent Nuclear Fuel"**	**Due 11/30/00** - On schedule.
M-34-06-T01	**"Initiate K West Basin Spent Nuclear Fuel Canister Cleaning Operations"**	**Due 12/31/00** - On schedule.

DNFSB Commitments

	Nothing to report.	

MILESTONE EXCEPTION REPORT

Nothing to report.

PERFORMANCE OBJECTIVES

Readiness for Fuel Movement (RC-1-1.a-I) ¾ Contractor completion of construction and operational testing, Management Self-Assessment (MSA), and Independent Operational Readiness Review (ORR) by September 14, 2000 to begin moving fuel by November 30, 2000. Start of fuel movement is currently on track for November 30, 2000.

Green

Phased Startup Initiative (PSI) (RC-1-1.a-II) ¾ Complete PSI Phases 1 & 2 by April 15, 2000. This includes successful Cold Testing of Integrated Water Treatment System (IWTS) & Fuel Retrieval System (FRS). This activity is behind schedule due to required changes to the IWTS Control System Software. This accelerated non-critical path testing activity continues to allow KW Basin system problems to be uncovered and fixed much earlier that the baseline schedule

Red

Accelerate Fuel Movement (RC-1SS-1) ¾ Accelerate start of fuel movement by two months. Assumes no problems during first fuel movement and no ORR or MSA discrepancies.

Yellow

Phased Startup Initiative (PSI) (RC-1SS-2) ¾ Complete Phases 3 & 4 by August 15, 2000. This includes completion of FRS/IWTS system testing using SNF (real fuel) and Completion of Construction Documentation Phase II (CCD2). (This documentation represents progressing from start-up to Operations.) This activity is on schedule.

Green

KEY INTEGRATION ACTIVITIES

- Spent nuclear fuel (SNF) final disposition interface activities, including Office of Civilian Radiation Waste Management (OCRWM) Quality Assurance (QA) Program implementation, ongoing with National SNF Program.
- K Basins sludge removal and Shippingport (PA) Pressurized Water Reactor Core 2 SNF removal implementation activities ongoing with Waste Management Project.
- 324 Building (B Cell) SNF removal acceptance criteria and conceptual design reviews ongoing with River Corridor Project.
- Neutron Radiography Facility, Training, Research and Isotope Production, General Atomics (TRIGA), and FFTF SNF relocation planning ongoing with FFTF Project.
- Input provided to BHI on recovery actions required if SNF is discovered during upcoming reactor basins deactivation.
- Completed assessment and documentation for the Canister Storage Building's readiness to support the receipt of Immobilized High Level Waste (IHLW) from ORP.